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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,922	10/20/2003	Po-Cheng Chen	025789-00011	8338

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EXAMINER

SANTIAGO, MARICELI

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/687,922

Applicant(s)

CHEN ET AL.

Examiner

Mariceli Santiago

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-10, 12-16 and 18 is/are rejected.
- 7) ☒ Claim(s) 5, 11 and 17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6-8, 12-14 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Sano (US 5,182,489).

Regarding claim 1, Sano discloses a plasma display panel (Figs. 1A, 1B) comprising barrier ribs (22) configured to form a plurality of closed cells (24), display electrodes (14) formed on a front substrate (10), and an address electrode (16) formed on a rear substrate (12), with the barrier ribs disposed between the front and rear substrates to define a delta color pixel structure (Fig. 1A) having a plurality of sub-pixels (26), wherein each of the sub-pixels (26) has a discharge region which is filled with a first discharge gas (He) of at least 15 % by volume, and a second discharge gas (Xe) of 85% or less by volume (He-4%Xe, Column 4, lines 41-43).

Regarding claim 6, Sano discloses a plasma display panel wherein the discharge region is coated with a phosphor layer (28).

Regarding claim 7, Sano discloses a plasma display panel (Figs. 1A, 1B) comprising barrier ribs (22) configured to form a closed shape (24), display electrodes (14) formed on a front substrate (10), and an address electrode (16) formed on a rear substrate (12), with the barrier ribs (22) disposed between the front and rear substrates to define a delta color pixel structure (Fig. 1A) having a plurality of sub-pixels (26), wherein each of the sub-pixels has a discharge region which is filled with a first discharge gas (Xe) of 50 % or less by volume, and a second discharge gas (He) of 50% or more by volume (He-4%Xe, Column 4, lines 41-43).

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Regarding claim 8, Sano discloses a plasma display panel wherein the first gas is a xenon gas and the second gas is a helium-based gas mixture (He-4%Xe, Column 4, lines 41-43).

Regarding claim 12, Sano discloses a plasma display panel wherein the discharge region is coated with a phosphor layer (28).

Regarding claim 13, Sano discloses a method of constructing a plasma display panel (Figs. 1A, 1B) comprising configuring barrier ribs (22) to form a closed shape (24), forming display electrodes (14) on a front substrate (10), and forming an address electrode (16) on a rear substrate (12), with the barrier ribs disposed between the front and rear substrates to define a delta color pixel structure (Fig. 1A) having a plurality of sub-pixels (26), wherein each of the sub-pixels has a discharge region which is filled with a first discharge gas (Xe) of 50% or less by volume, and a second discharge gas (He) of 50% or more by volume (He-4%Xe, Column 4, lines 41-43).

Regarding claim 14, Sano discloses a method wherein the first gas is a xenon gas and the second gas is a helium-based gas mixture (He-4%Xe, Column 4, lines 41-43).

Regarding claim 18, Sano discloses a method wherein the discharge region is coated with a phosphor layer (28).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6-10, 12-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 2002/0175623) in view of Aoki et al. (US 5,770,921).

Regarding claims 1-4, Kim discloses a plasma display panel (Fig. 1) comprising barrier ribs (30) configured to form a plurality of closed cells (SR, SG, SB), display electrodes (21, 22) formed on a front substrate (12), and an address electrode (26) formed on a rear substrate (11), with the barrier ribs disposed between the front and rear substrates to define a delta color pixel structure (Fig. 1, paragraph [0026]) having a plurality of sub-pixels, wherein each of the sub-pixels has a discharge region which is filled with a first discharge gas and a second discharge gas, wherein the first gas is a xenon gas and the second gas is a helium-based or a neon-based mixture, and wherein the helium-based gas mixture is helium-argon (paragraph [0005]).

Kim fails to disclose the limitation of filled with the first discharge gas of at least 15 % by volume, and the second discharge gas of 85% or less by volume. In the same field of endeavor, Aoki discloses a plasma display panel (Fig. 2) comprising barrier ribs configured to form a plurality of closed cells and defining a plurality of sub-pixels, wherein the sub-pixels have a discharge region which is filled with the first discharge gas (xenon) of at least 15 % by volume, and the second discharge gas (helium or neon) of 85% or less by volume (Tables 1 and 3), wherein the first gas is a xenon gas and the second gas is a neon-based (Table 3, Example 24), and wherein the neon-based gas mixture is neon-argon (Table 3, Example 24). By the provision of the disclosed percentage of gas mixture composition, Aoki's plasma display panel shows improved panel brightness, discharge maintenance voltage and an increase in light-emission efficiency. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the percentage of the gas mixture composition disclosed by Aoki in the device of Kim in order to improved panel brightness, discharge maintenance voltage and an increase in light-emission efficiency.

Regarding claim 6, Kim discloses a plasma display panel wherein the discharge region is coated with a phosphor layer (Paragraph [0025]).

Regarding claims 7-10, Kim discloses a plasma display panel (Fig. 1) comprising barrier ribs (30) configured to form a closed shape (SR, SG, SB), display electrodes (21, 22) formed on a front substrate (12), and an address electrode (26) formed on a rear substrate (11), with the barrier ribs (30) disposed between the front and rear substrates to define a delta color pixel structure (Fig. 1, paragraph [0026]) having a plurality of sub-pixels, wherein each of the sub-pixels has a discharge region which is filled with a first discharge gas and a second discharge gas, wherein the first gas is a xenon gas and the second gas is a helium-based or a neon-based mixture, and wherein the helium-based gas mixture is helium-argon (paragraph [0005]).

Kim fails to disclose the limitation of each of the sub-pixels has a discharge region which is filled with a first discharge gas of 50% or less by volume, and a second discharge gas of 50% or more by volume. In the same field of endeavor, Aoki discloses a plasma display panel (Fig. 2) comprising barrier ribs configured to form a plurality of closed cells and defining a plurality of sub-pixels, wherein the sub-pixels have a discharge region which is filled with the first discharge gas (xenon) of 50% or less by volume, and the second discharge gas (helium or neon) of 50% or more by volume (Tables 1 and 3), wherein the first gas is a xenon gas and the second gas is a neon-based (Table 3, Example 24), and wherein the neon-based gas mixture is neon-argon (Table 3, Example 24). By the provision of the disclosed percentage of gas mixture composition, Aoki's plasma display panel shows improved panel brightness, discharge maintenance voltage and an increase in light-emission efficiency. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the percentage of the gas mixture composition disclosed by Aoki in the device of Kim in order to improved panel brightness, discharge maintenance voltage and an increase in light-emission efficiency.

Regarding claim 12, Kim discloses a plasma display panel wherein the discharge region is coated with a phosphor layer (Paragraph [0025]).

Regarding claims 13-16, Kim discloses a method of constructing a plasma display panel (Fig. 1) comprising configuring barrier ribs (30) to form a closed shape (SR, SG, SB), forming display electrodes (21, 22) on a front substrate (12), and forming an address electrode (26) on a rear substrate (11), with the barrier ribs disposed between the front and rear substrates to define a delta color pixel structure (Fig. 1, paragraph [0026]) having a plurality of sub-pixels, wherein each of the sub-pixels has a discharge region which is filled with a first discharge gas and a second discharge gas, wherein the first gas is a xenon gas and the second gas is a helium-based or a neon-based mixture, and wherein the helium-based gas mixture is helium-argon (paragraph [0005]).

Kim fails to disclose the limitation of each of the sub-pixels has a discharge region which is filled with a first discharge gas of 50% or less by volume, and a second discharge gas of 50% or more by volume. In the same field of endeavor, Aoki discloses a plasma display panel (Fig. 2) comprising barrier ribs configured to form a plurality of closed cells and defining a plurality of sub-pixels, wherein the sub-pixels have a discharge region which is filled with the first discharge gas (xenon) of 50% or less by volume, and the second discharge gas (helium or neon) of 50% or more by volume (Tables 1 and 3), wherein the first gas is a xenon gas and the second gas is a neon-based (Table 3, Example 24), and wherein the neon-based gas mixture is neon-argon (Table 3, Example 24). By the provision of the disclosed percentage of gas mixture composition, Aoki's plasma display panel shows improved panel brightness, discharge maintenance voltage and an increase in light-emission efficiency. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the percentage of

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the gas mixture composition disclosed by Aoki in the device of Kim in order to improved panel brightness, discharge maintenance voltage and an increase in light-emission efficiency.

Regarding claim 18, Kim discloses a plasma display panel wherein the discharge region is coated with a phosphor layer (Paragraph [0025]).

Allowable Subject Matter

Claims 5, 11 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 5, 11 and 16, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 5, 11 and 16, and specifically comprising the limitation of an operation margin for the plasma display panel is not less than 10 voltages when the discharge region is filled with the xenon gas of 30% by volume.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

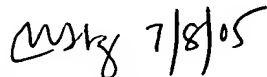
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 7/8/05

Mariceli Santiago
Primary Examiner
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